

IN THE CLAIMS:

1. (currently amended) A process for purifying exhaust gas from gasoline engines comprising a step of purifying exhaust gas from a gasoline engine of a fuel-direct-injection type by contacting said exhaust gas with an exhaust-gas purifying-use catalyst that contains a noble metal and a fire-resistant inorganic oxide carrying the noble metal, said fire-resistant inorganic oxide being active alumina, titania, [[or]] zirconia, ~~or a composite oxide thereof alumina-titania, alumina-zirconia, or titania-zirconia~~, an amount of the noble metal being in a range of 0.01 to 50 g/liter with respect to the catalyst volume, an amount of the fire-resistant inorganic oxide being about 50 to 300 g/liter with respect to the catalyst volume, and a water-soluble compound being used as a source of the noble metal;

wherein said gasoline engine of a fuel-direct-injection type is one which allows fuel to be directly injected inside a cylinder of the engine, and

wherein the exhaust gas varies between a first exhaust gas state having an exhaust-gas temperature in a range of 350 to 800°C at an inlet of the catalyst and a second exhaust gas state that forms a more oxidizing, low-temperature atmosphere as compared with the first exhaust gas state, depending on changes in air-fuel

ratio, the second exhaust gas state having an exhaust-gas temperature in a range of 200 to 500°C at the inlet of the catalyst.

2. (original) The process for purifying exhaust gas from gasoline as defined in claim 1, wherein the exhaust gas is purified by removing hydrocarbon, carbon monoxide and nitrogen oxides from the exhaust gas by the use of the catalyst.

3. (previously presented) The process for purifying exhaust gas from gasoline engines as defined in claim 1, wherein the first exhaust gas state appears when the air-fuel ratio is in the range of 13 to 15, and the second exhaust gas state appears when the air-fuel ratio exceeds the above-mentioned air-fuel ratio.

4. (original) The process for purifying exhaust gas from gasoline engines as defined in claim 3, wherein the second exhaust gas state appears when the air-fuel ratio ranges from more than 15 up to 50.

5. (original) The process for purifying exhaust gas from gasoline engines as defined in claim 1, wherein the catalyst

includes at least one kind of noble metals, selected from the group consisting of platinum, palladium, rhodium, and iridium.

6. (previously presented) The process for purifying exhaust gas from gasoline engines as defined in claim 1, wherein the catalyst includes at least one of platinum and iridium.

7. (previously presented) The process for purifying exhaust gas from gasoline engines as defined in claim 1, wherein said catalyst further comprises a transition metal, an amount of the transition metal being in a range of 0.01 to 50 g/liter with respect to the catalyst volume, and a water-soluble compound being used as a source of the transition metal contained in the catalyst.

8. (previously presented) The process for purifying exhaust gas from gasoline as defined in claim 1, wherein:

 said gasoline engine includes: a cylinder that serves as a combustion chamber for gasoline as a fuel; an ignition plug; an injector that is used for injecting the fuel; a control section for controlling an ignition timing of the ignition plug and an amount of fuel injection of the injector, and

the control section controls an air-fuel ratio depending on the injector so as to cause the gasoline engine to be in the second exhaust gas state.

9. (previously presented) The process for purifying exhaust gas from gasoline as defined in claim 8, wherein:

the control section controls an air-fuel ratio depending on the injector so that a temperature of the exhaust gas at an inlet of the catalyst is not more than 350°C so as to cause the gasoline engine to be in the second exhaust gas state.

10. (previously presented) The process for purifying exhaust gas from gasoline as defined in claim 8, wherein:

the control section controls an air-fuel ratio depending on the injector so that a temperature of the exhaust gas at an inlet of the catalyst is not more than 300°C so as to cause the gasoline engine to be in the second exhaust gas state.

11. (currently amended) A process for purifying exhaust gas from gasoline engines comprising a step of purifying exhaust gas from a gasoline engine of a fuel-direct-injection type by contacting said exhaust gas with a single exhaust-gas purifying-use

catalyst composition that consists essentially of a noble metal and a fire-resistant inorganic oxide carrying the noble metal, said fire-resistant inorganic oxide being active alumina, titania, [[or]] zirconia, ~~or a composite oxide thereof alumina-titania, alumina-zirconia, or titania-zirconia,~~ an amount of the noble metal being in a range of 0.01 to 50 g/liter with respect to the catalyst volume, an amount of the fire-resistant inorganic oxide being 50 to 300 g/liter with respect to the catalyst volume, and a water-soluble compound being used as a source of the noble metal contained in the catalyst;

wherein said gasoline engine of a fuel-direct-injection type is one which allows fuel to be directly injected inside a cylinder of the engine, and

wherein the exhaust gas varies between a first exhaust gas state having an exhaust-gas temperature in a range of 350 to 800°C at an inlet of the catalyst and a second exhaust gas state that forms a more oxidizing, low-temperature atmosphere as compared with the first exhaust gas state, depending on changes in air-fuel ratio, the second exhaust gas state having an exhaust-gas temperature in a range of 200 to 500°C at the inlet of the catalyst.

12. (previously presented) The process for purifying exhaust gas from gasoline as defined in claim 1, wherein the catalyst further contains, as a co-catalyst, a rare-earth metal.

13. (previously presented) The process for purifying exhaust gas from gasoline engines according to claim 1 wherein the exhaust-gas purifying-use catalyst that contains a noble metal is obtained by impregnating a noble metal in the fire-resistant inorganic oxide.

14. (previously presented) The process for purifying exhaust gas from gasoline engines according to claim 11 wherein the single exhaust-gas purifying-use catalyst that consists essentially of a noble metal is obtained by impregnating a noble metal in the fire-resistant inorganic oxide.